

M. Mosher

*#11 SK
8/16/00*

RECEIVED

AUG 15 2000

TECH CENTER 1600/2900

Page 1 of 7

1648

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/306,420B

DATE: 08/09/2000
TIME: 15:16:23

Input Set : A:\SEQLIST.txt
Output Set: N:\CRF3\08092000\I306420B.raw

3 <110> APPLICANT: LOCARNINI, STEPHEN A
4 BARTHOLOMEUSZ, ANGELINE I
5 AYE, THEIN T
6 DEMAN, ROBERT A
8 <120> TITLE OF INVENTION: VIRAL VARIANTS AND METHODS FOR DETECTING SAME
10 <130> FILE REFERENCE: 2551-28
12 <140> CURRENT APPLICATION NUMBER: 09/306,420B
13 <141> CURRENT FILING DATE: 1999-05-06
15 <150> PRIOR APPLICATION NUMBER: PCT/AU97/00520
16 <151> PRIOR FILING DATE: 1997-08-15
18 <150> PRIOR APPLICATION NUMBER: P03519
19 <151> PRIOR FILING DATE: 1996-11-08
21 <160> NUMBER OF SEQ ID NOS: 57
23 <170> SOFTWARE: PatentIn Ver. 2.0
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 20
27 <212> TYPE: DNA /
28 <213> ORGANISM: Hepatitis B virus /
30 <400> SEQUENCE: 1
31 ggagtggtgga ttgcactcc 20
34 <210> SEQ ID NO: 2
35 <211> LENGTH: 17
36 <212> TYPE: DNA /
37 <213> ORGANISM: Hepatitis B virus /
39 <400> SEQUENCE: 2
40 gctccaaatt ctttata 17
43 <210> SEQ ID NO: 3
44 <211> LENGTH: 20
45 <212> TYPE: DNA /
46 <213> ORGANISM: Hepatitis B virus /
48 <400> SEQUENCE: 3
49 cctttacccc gttgcccggc 20
52 <210> SEQ ID NO: 4
53 <211> LENGTH: 17
54 <212> TYPE: DNA /
55 <213> ORGANISM: Hepatitis B virus /
57 <400> SEQUENCE: 4
58 gctccaaatt ctttata 17
61 <210> SEQ ID NO: 5
62 <211> LENGTH: 23
63 <212> TYPE: DNA /
64 <213> ORGANISM: Hepatitis B virus /
66 <400> SEQUENCE: 5
67 gccgcgtcgc agaagatctc aat 23
70 <210> SEQ ID NO: 6
71 <211> LENGTH: 20
72 <212> TYPE: DNA /

ENTERED

see p. 5

RAW SEQUENCE LISTING

DATE: 08/09/2000

PATENT APPLICATION: US/09/306,420B

TIME: 15:16:23

Input Set : A:\SEQLIST.txt

Output Set: N:\CRF3\08092000\I306420B.raw

RECEIVED

AUG 15 2000

TECH CENTER 1600/2000

```

73 <213> ORGANISM: Hepatitis B virus✓
75 <400> SEQUENCE: 6
76 ggttctatcc taaccttacc 20
79 <210> SEQ ID NO: 7
80 <211> LENGTH: 23
81 <212> TYPE: DNA ✓
82 <213> ORGANISM: Hepatitis B virus✓
84 <400> SEQUENCE: 7
85 gcctcatttt gtgggtcacc ata 23
88 <210> SEQ ID NO: 8
89 <211> LENGTH: 21
90 <212> TYPE: DNA ✓
91 <213> ORGANISM: Hepatitis B virus
93 <400> SEQUENCE: 8
94 tgggggtgga gccctcaggc t 21
97 <210> SEQ ID NO: 9
98 <211> LENGTH: 20
99 <212> TYPE: DNA ✓
100 <213> ORGANISM: Hepatitis B virus✓
102 <400> SEQUENCE: 9
103 cacaacattc caccaagctc 20
106 <210> SEQ ID NO: 10
107 <211> LENGTH: 18
108 <212> TYPE: DNA ✓
109 <213> ORGANISM: Hepatitis B virus✓
111 <400> SEQUENCE: 10
112 aaattcgag tccccaac 18
115 <210> SEQ ID NO: 11
116 <211> LENGTH: 19
117 <212> TYPE: DNA ✓
118 <213> ORGANISM: Hepatitis B virus✓
120 <400> SEQUENCE: 11
121 gtttccctct tcttgctgt 19
124 <210> SEQ ID NO: 12
125 <211> LENGTH: 21
126 <212> TYPE: DNA ✓
127 <213> ORGANISM: Hepatitis B virus✓
129 <400> SEQUENCE: 12
130 ttttcttttg tctttggga t 21
133 <210> SEQ ID NO: 13
134 <211> LENGTH: 21
135 <212> TYPE: DNA ✓
136 <213> ORGANISM: Hepatitis B virus✓
138 <400> SEQUENCE: 13
139 ccaacttaca aggcctttct g 21
142 <210> SEQ ID NO: 14
143 <211> LENGTH: 23
144 <212> TYPE: DNA ✓
145 <213> ORGANISM: Hepatitis B virus✓

```

RAW SEQUENCE LISTING DATE: 08/09/2000
 PATENT APPLICATION: US/09/306,420B TIME: 15:16:23

Input Set : A:\SEQLIST.txt
 Output Set: N:\CRF3\08092000\I306420B.raw

RECEIVED

AUG 15 2000

TECH CENTER 1600/2800

```

147 <400> SEQUENCE: 14
148 catcgtttcc atggctgcta ggc 23
151 <210> SEQ ID NO: 15
152 <211> LENGTH: 19
153 <212> TYPE: DNA /
154 <213> ORGANISM: Hepatitis B virus
156 <400> SEQUENCE: 15
157 gtttccctct tcttgctgt 19
160 <210> SEQ ID NO: 16
161 <211> LENGTH: 21
162 <212> TYPE: DNA /
163 <213> ORGANISM: Hepatitis B virus
165 <400> SEQUENCE: 16
166 ataccctaaag acaaaagaaa a 21
169 <210> SEQ ID NO: 17
170 <211> LENGTH: 550
171 <212> TYPE: DNA /
172 <213> ORGANISM: Hepatitis B virus
174 <220> FEATURE:
175 <221> NAME/KEY: CDS /
176 <222> LOCATION: (1)..(549) /
178 <400> SEQUENCE: 17
179 tct tcc aat ttg tcc tgg tta tgg ctg gat gtg tct gcg gcg ttt tat 48
180 Ser Ser Asn Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr
181 1 5 10 15
183 cat att cct ctt cat cct gct gct atg cct cat ctt ctt att ggt tct 96
184 His Ile Pro Leu His Pro Ala Ala Met Pro His Leu Leu Ile Gly Ser
185 20 25 30
187 tct gga tta tca agg tat gtt gcc cgt ttg tcc tct aat tcc agg atc 144
188 Ser Gly Leu Ser Arg Tyr Val Ala Arg Leu Ser Ser Asn Ser Arg Ile
189 35 40 45
191 aac aac aac atg caa aac ctg cac gac tcc tgc tca agg caa ctc tac 192
192 Asn Asn Asn Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln Leu Tyr
193 50 55 60
195 gtt tcc ctc atg ttg ctg tac aaa acc tac gga gag aaa ttg cac ctg 240
196 Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Glu Lys Leu His Leu
197 65 70 75 80
199 tat tcc cat ccc atc gtc ctg gcc ttt cgc aaa ata cct atg gga gtg 288
200 Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met Gly Val
201 85 90 95
203 gcc ctc agt ccg ttt ctc ttg gct cag ttt act agt gcc att tgt tca 336
204 Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser
205 100 105 110
207 gtg gtt cgt agg gct ttc ccc cac tgt ttg gct ttc agc tat atg gat 384
208 Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp
209 115 120 125
211 gat gtg gta ttg ggg gcc aag tct gta cag cat cgt gag gcc ctt tat 432
212 Asp Val Val Leu Gly Ala Lys Ser Val Gln His Arg Glu Ala Leu Tyr
213 130 135 140

```

RAW SEQUENCE LISTING DATE: 08/09/2000
 PATENT APPLICATION: US/09/306,420B TIME: 15:16:23

Input Set : A:\SEQLIST.txt
 Output Set: N:\CRF3\08092000\I306420B.raw

215 acc gct gtt acc aat ttt ctt ttg tct ctg ggt ata cat tta aac cct 480
 216 Thr Ala Val Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro
 217 145 150 155 160
 219 aac aaa aca aaa aga tgg ggt tat tcc cta aac ttc atg ggt tac ata 528
 220 Asn Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Ile
 221 165 170 175
 223 att gga agt tgg gga aca ttg c 550
 224 Ile Gly Ser Trp Gly Thr Leu
 225 180
 228 <210> SEQ ID NO: 18
 229 <211> LENGTH: 183
 230 <212> TYPE: PRT
 231 <213> ORGANISM: Hepatitis B virus
 233 <400> SEQUENCE: 18
 234 Ser Ser Asn Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr
 235 1 5 10 15
 237 His Ile Pro Leu His Pro Ala Ala Met Pro His Leu Leu Ile Gly Ser
 238 20 25 30
 240 Ser Gly Leu Ser Arg Tyr Val Ala Arg Leu Ser Ser Asn Ser Arg Ile
 241 35 40 45
 243 Asn Asn Asn Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln Leu Tyr
 244 50 55 60
 246 Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Glu Lys Leu His Leu
 247 65 70 75 80
 249 Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met Gly Val
 250 85 90 95
 252 Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser
 253 100 105 110
 255 Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp
 256 115 120 125
 258 Asp Val Val Leu Gly Ala Lys Ser Val Gln His Arg Glu Ala Leu Tyr
 259 130 135 140
 261 Thr Ala Val Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro
 262 145 150 155 160
 264 Asn Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Ile
 265 165 170 175
 267 Ile Gly Ser Trp Gly Thr Leu
 268 180
 272 <210> SEQ ID NO: 19
 273 <211> LENGTH: 550
 274 <212> TYPE: DNA
 275 <213> ORGANISM: Hepatitis B virus
 277 <220> FEATURE:
 278 <221> NAME/KEY: CDS
 279 <222> LOCATION: (2)..(472)
 281 <220> FEATURE:
 282 <221> NAME/KEY: CDS
 283 <222> LOCATION: (476)..(508)
 285 <220> FEATURE:

RECEIVED

AUG 15 2000

TECH CENTER 1600/2900

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/306,420B DATE: 08/09/2000
 TIME: 15:16:23

Input Set : A:\SEQLIST.txt
 Output Set: N:\CRF3\08092000\I306420B.raw

RECEIVED

AUG 15 2000

TECH CENTER 1600/2900

```

286 <221> NAME/KEY: CDS ✓
287 <222> LOCATION: (512)..(526)
289 <220> FEATURE:
290 <221> NAME/KEY: CDS
291 <222> LOCATION: (530)..(550) ✓
293 <400> SEQUENCE: 19
294 t'ctt cca att tgt cct ggt tat cgc tgg atg tgt ctg cgg cgt ttt atc 49
295 Leu Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile
296 1 5 10 15
298 ata ttc ctc ttc atc ctg ctg cta tgc ctc atc ttc tta ttg gtt ctt 97
299 Ile Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val Leu
300 20 25 30
302 ctg gat tat caa ggt atg ttg ccc gtt tgt cct cta att cca gga tca 145
303 Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly Ser
304 35 40 45
306 aca aca aca tgc aaa acc tgc acg act cct gct caa ggc aac tct acg 193
307 Thr Thr Thr Cys Lys Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser Thr
308 50 55 60
310 ttt ccc tca tgt tgc tgt tgc aaa cct acg gag aga aat tgc acc 'tgt 241
311 Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Glu Arg Asn Cys Thr Cys
312 65 70 75 80
314 att ccc atc cca tgc tcc tgg gct ttc gca aaa tac cta tgg gag tgg 289
315 Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Lys Tyr Leu Trp Glu Trp
316 85 90 95
318 gcc tca gtc cgt ttc tct tgg ctc agt tta cta gtg cca ttt gtt cag 337
319 Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro Phe Val Gln
320 100 105 110
322 tgg ttc gta ggg ctt tcc ccc act gtt tgg ctt tca gct ata tgg atg 385
323 Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu Ser Ala Ile Trp Met
324 115 120 125
326 atg tgg tat tgg ggg cca agt ctg tac agc atc gtg agg ccc ttt ata 433
327 Met Trp Tyr Trp Gly Pro Ser Leu Tyr Ser Ile Val Arg Pro Phe Ile
328 130 135 140
330 ccg ctg tta cca att ttc ttt tgt ctc tgg gta tac att taa 'acc cta 481
331 Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile Thr Leu
332 145 150 155
334 aca aaa caa aaa gat ggg gtt att ccc' taa act tca tgg gtt aca' taa 529
335 Thr Lys Gln Lys Asp Gly Val Ile Pro Thr Ser Trp Val Thr
336 160 165 170
338 'ttg gaa gtt ggg gaa cat tgc' 550
339 Leu Glu Val Gly Glu His Cys
340 175 180
343 <210> SEQ ID NO: 20
344 <211> LENGTH: 157
345 <212> TYPE: PRT ✓
346 <213> ORGANISM: Hepatitis B virus ✓
348 <400> SEQUENCE: 20
349 Leu Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile
350 1 5 10 15

```

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

← F.Y.I.

VERIFICATION SUMMARY

DATE: 08/09/2000

PATENT APPLICATION: US/09/306,420B

TIME: 15:16:24

Input Set : A:\SEQLIST.txt

Output Set: N:\CRF3\08092000\I306420B.raw

L:437 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24
L:496 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:499 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:502 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:528 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:584 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:587 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:628 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28
L:911 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:914 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:917 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:920 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:923 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:926 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:929 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:932 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:935 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:938 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:941 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:944 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29
L:1126 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41
L:1205 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42
L:1208 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42
L:1211 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42
L:1252 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43
L:1288 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44
L:1291 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44
L:1327 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45
L:1365 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48

IVED

JG 152003

TECH CENTER 1600/2000